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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/374,079	08/12/1999	TRACY D. HARMER	TI-27445	3296

23494 7590 07/03/2002

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EXAMINER	
BAKER, STEPHEN M	
ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/374,079	Applicant(s) HARMER ET AL.	
	Examiner Stephen M. Baker	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 description of driver instructions in BIOS as being instructions of a "device driver extension", does not appear to be supported by the disclosure (*e.g.* page 6, lines 22-25).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,223,321 to Nasu *et al.* ("Nasu").

Nasu discloses floppy disk drive data error correction operations distributed between disk drive hardware and host software. Nasu shows a computer system with one embodiment of the invention (Fig. 2) including a "host computer" (10) with a "CPU" (13), and floppy disk "mass storage device" (1). Nasu's C1 correction unit (3) provides "ECC hardware associated with said mass storage device". Nasu's host computer (10) requires "software instructions for execution by said CPU for performing at least some ECC instructions on data read from said mass storage device" (col. 8, lines 25-26 and

63-67). Nasu's "software instructions" are apparently part of a floppy disk device-specific control program for enabling a computer to work with the floppy disk device, and thus can be seen to be part of a "device driver".

Regarding claim 3, Nasu's host (10) presumably corrects the data in host RAM.

Regarding claims 5 and 6, in another embodiment of Nasu's invention (Fig. 1) a non-zero C2 syndrome serves as an "error flag" sent to the host (10).

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,252,961 to Hogan ("Hogan").

Hogan discloses disk drive data error correction operations distributed between disk drive hardware and host software (col. 1, lines 63-65). The disk drive can be a hard drive (col. 1, lines 20 and 50). Hogan shows a computer system including a "host computer" (14) with a "CPU", and a disk drive "mass storage device" (16). Hogan's disk drive provides "ECC hardware associated with said mass storage device". Hogan's host computer (14) requires "software instructions for execution by said CPU for performing at least some ECC instructions on data read from said mass storage device". Hogan's "software instructions" are apparently part of a disk device-specific control program for enabling a computer to work with the disk device, and thus can be seen to be part of a "device driver".

Regarding claim 3, Hogan's host (14) presumably corrects the data in host RAM.

Claim Rejections - 35 USC § 103

5. Claims 4, 7-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nasu.

Regarding claim 4, Nasu doesn't specify hardware-based ECC encoding ("data integrity determination information") for writing to the disk drive. Official Notice is given that the hardware-sharing advantages of performing hardware-based ECC encoding when hardware-based ECC decoding is also provided were well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Nasu's system with hardware-based ECC encoding for the disk drive. Such a provision would have been obvious because the hardware-sharing advantages of performing hardware-based ECC encoding when hardware-based ECC decoding is also provided were well known.

Regarding claims 7-9, Nasu doesn't specify that the floppy disk data ECC decoding "software instructions" are in "system BIOS" memory. Official Notice is given that advantages of placing the code for a floppy disk driver in "system BIOS" memory to enable booting from a floppy disk were well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Nasu's floppy disk data ECC decoding "software instructions" for the host in system BIOS. Such an implementation would have been obvious because advantages of placing a floppy disk driver in system BIOS memory to enable booting from a floppy disk were well known.

Regarding claim 10, a driver "expansion" in comparison with Nasu's prior art (Fig. 3) driver requirements is apparently required.

Regarding claim 12, in another embodiment (Fig. 1) a non-zero C2 syndrome serves as an "error flag" sent to the host (10).

6. Claims 4-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan.

Regarding claims 4 and 12, Hogan doesn't specify hardware-based ECC encoding ("data integrity determination information") for writing to the disk drive. Official Notice is given that the hardware-sharing advantages of performing hardware-based ECC encoding when hardware-based ECC decoding is also provided were well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Hogan's system with hardware-based ECC encoding for the disk drive. Such a provision would have been obvious because the hardware-sharing advantages of performing hardware-based ECC encoding when hardware-based ECC decoding is also provided were well known.

Regarding claims 5 and 6, Hogan doesn't specify hardware-based error flag generation for indicating to the host that transferred data contains uncorrected errors. Official Notice is given that hardware-based error flag generation for indicating to the host that transferred data contains uncorrected errors was well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Hogan's system with hardware-based error flag generation. Such a provision would have been obvious because hardware-

based error flag generation for indicating to the host that transferred data contains uncorrected errors was well known.

Regarding claims 7-9, Hogan doesn't specify that the hard disk data ECC decoding "software instructions" are in "system BIOS" memory. Official Notice is given that advantages of placing the code for a hard disk driver in "system BIOS" memory to enable booting from a hard disk were well known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Hogan's hard disk data ECC decoding "software instructions" for the host in system BIOS. Such an implementation would have been obvious because advantages of placing a hard disk driver in system BIOS memory to enable booting from a hard disk were well known.

Response to Arguments

7. Applicant's arguments filed 22 April 2002 have been fully considered but they are not persuasive.

Applicant is apparently relying upon a non-standard definition of "device driver", which term is understood by the examiner to refer to a device-specific control program for enabling a computer to work with a particular device.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (703)

305-9681. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

Stephen M. Baker
Primary Examiner
Art Unit 2133

smb
June 29, 2002